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ABSTRACT

In November, 1985, the Council of Chief State School Officers adopted a plan for developing educational indicators. The plan provided for the development of a common measure of student achievement to be collected across states beginning in 1988-89. In order to design a student achievement assessment program, the states were asked to give their opinion on the following issues: specific subject matters to be assessed; type of information that the assessment program would provide; and procedures for collecting data. On the basis of the responses from 20 states, a preliminary assessment program was developed. Responses suggested that subject matter and assessment specialists, considering the broadest instructional content and priorities, should establish the subject specification frameworks. Information should be reported as single value for each subject at each grade level. Reading, writing, English and mathematics should be assessed every other year, and science and social studies every four years. The Council of Chief State School Officers (CCSSO) or another suitable organization should govern the data collection procedures. Test administration should be monitored, and sampling, scoring, and data processing should be conducted through a single, central project funded by the states and administered by CCSSO. (JAZ)

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# PRELIMINARY DESIGN:

# STATE-BY-STATE ASSESSMENT OF

# STUDENT ACHIEVEMENT

Council of Chief State School Officers
State Education Assessment Center

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September 1986

## Background

In November, 1985, the Council of Chief State School Officers adopted a plan for developing educational indicators to be compared across states. These indicators included a measure of student achievement. The plans provided for the development of a common measure of student achievement to be collected across states beginning with the 1988-89 school year. In addition, the plans called for measuring student achievement on a cyclical basis in the subjects of reading, mathematics, science, social studies, and English, at the elementary, intermediate, and secondary school levels, drawing on a common test-item pool. The plan called for considering the item pool developed in the National Assessment of Educational Progress for this purpose.

With these parameters as a base, work began last winter in the CCSSO State Education Assessment Center to proceed with the development of a state-by-state program for assessing student achievement. Comment was sought from states on three major issues around which consensus had to be established in order to proceed with development of the program: how would states get together on the specification of subject matter to be assessed? What kind of information should be provided from the assessment program, including the cycle for the assessment program; that is, on what

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schedule should the various subject areas be assessed? And, how could uniform collection of data in the states be ensured; that is, what provisions did states want, in order to ensure standardized data-collection procedures across states?

These issues were addressed in a meeting last March of testing and instructional program staff from thirty-five states. Each issue was presented, options and implications were discussed, and either a preliminary consensus or major alternatives were developed. These discussions and recommendations were conveyed to states in a white paper, and the responses of individual states were sought to the issues presented in the white paper. Responses were received from twenty states and have been compiled and analyzed, permitting development of a preliminary design for the student achievement assessment program.

The remainder of this paper presents that design, organized around these three major issues and presenting the position of states on the design issues.

## Specifying Subject Matter

Development of any educational assessment program must begin with specification of the subject matter to be assessed. This must be done to allow selection or development of a test that corresponds validly to the content and emphases of the instructional program being assessed.

This process is critical when developing an assessment program at the state or national levels. Because of the diversity that exists among the instructional programs operated by states, local school districts,

schools, and teachers, subject matter must not only be defined; consensus or commonality among differing programs must be established.

Three options were developed for arriving at such commonality. First, the instructional objectives or curricular frameworks of those states that have developed them could be examined, so that content that was common across all of them would be identified. This was referred to as the "least common denominator" approach, because it would result in specification only of subject matter that was common across all states, and would include nothing that was not addressed by all states that have established curricular objectives or priorities. Second, states could be convened to establish the maximal set of subject-matter and priorities that they can agree upon, even though some of the subject matter or the priorities may differ somewhat from the states' own objectives and priorities. Here, it was felt that a maximal consensus could be established, based on the collective opinion of states as to what was educationally important. Finally, a mixed option was discussed, in which a common core was established to be assessed in all states, and in which instructional components in addition to the core could be assessed at the discretion of the individual state.

The response from states overwhelmingly favored the "maximal consensus" approach. Only one state favored the "least common denominator," and one favored the mixed model, but modified so states were required to select a certain number of optional components.

<u>This response indicates that state-by-state assessment of student achievement should be based upon specification in each subject area that</u>

represents the broadest statement of instructional content and priorities that the states can agree upon. It further suggests that the development of the assessment program can proceed, with the convening of subject-matter and assessment specialists from the states to discuss and establish these subject-area frameworks.

Information to be Provided

While plans for the assessment program included scaling, no recommendations were made regarding the type and level of information that the assessment program would provide. States were asked to comment on three issues: what level of detail should the assessment program provide in reporting results; specifically, should only a single, global value be reported for performance in each subject at each grade level, or should more detailed information be included on performance in major sub-areas in each subject--comprehension, vocabulary, and word attack in reading, or computation and problem-solving in mathematics? Second, how frequently should performance in the various subjects be assessed and reported; i.e. yearly? Every two years? Every four years? Finally, what type of scale should be used to report results; specifically, should the scales used in the current National Assessment of Educational Progress be used, or should some other scale be developed and used.

On the issue of the level of detail to be provided, states were consistently in favor of reporting simple, global information on performance in each subject. Seventeen states preferred global scores and just two preferred that the information be reported only in terms of

sub-areas. Eight states indicated that subscales could be reported usefully as options or as secondary information in reports.

This suggests that information from a state-by-state assessment program be reported as single values for each subject at each grade level, perhaps offering more detailed information on instructional sub-areas or as optional or additional information.

On the issue of the type of scale to be used, participants in the March meeting were split between preferring to use a scale consistent with the National Assessment of Educational Progress and preferring to develop a unique scale for a new, state-by-state assessment program. Few states indicated a preference on this issue in response to the planning paper, suggesting that this decision be deferred until it can be determined whether the National Assessment item pool and scales can be used in the state-by-state assessment program.

On the issue of the schedule and cycle with which to collect and report assessment information in each subject, states were presented with four options ranging from assessing all five subjects (reading, mathematics, science, social studies and English) every year to assessing one subject each year and each subject every four years (if reading and English were combined). The following figure shows these options.

Figure

OPTIONAL SCHEDULES FOR SUBJECT-AREA ASSESSMENT

| Year | Option 1<br>One Subject Each Year | Option 2<br>NAEP Schedule (Reading Plus One Other Area Every 2 Years) | Option 3<br>Basic Skills Alternating, Other Areas Every 4 Years | Option 4<br>Every Subject, Every Year |
|---|---|---|---|---|
| 1986 | | Rdg, Math<br>Sci (NAEP) | | |
| 1987 | | | | |
| 1988 | | Rdg, Wrtg<br>SS (NAEP) | | |
| - - - - - - - - | CCSSO Assessment Program Begins | - - - - - - - - | | |
| 1989 | Rdg/Wrtg/Eng | Rdg, Math<br>Sci | Rdg, Wrtg/Eng | Rdg, Wrtg/Eng<br>Math, Sci, SS |
| 1990 | Math | | Math, Sci | Rdg, Wrtg/Eng<br>Math, Sci, SS |
| 1991 | Sci | Rdg, Wrtg<br>SS | Rdg, Wrtg/Eng | Rdg, Wrtg/Eng<br>Math, Sci, SS |
| 1992 | SS | | Math, SS | Rdg, Wrtg/Eng<br>Math, Sci, SS |
| 1993 | Rdg/Wrtg/Eng | Rdg, Math<br>Sci | Rdg, Wrtg/Eng | . |
| | . | . | | . |
| 1994 | . | . | Math, Sci | . |
| | . | . | . | |
| | | | . | |
| | | | . | |

Key:
Rdg = Reading
Math = Mathematics
Sci = Science
Wrtg = Writing
SS = Social Studies
Rdg/Wrtg/Eng = Combined Reading, Writing, Literature and Language Arts
Wrtg/Eng = Combined Writing and English Literature and Language Arts

Year = Year of data collection and reporting
NAEP = Current NAEP program

Responses by states to these options were mixed. No state indicated that it was most desirable to assess every subject each year, but opinions were divided among the other options. Six states indicated that relatively infrequent assessment—one subject each year through a four-year cycle—was most desirable. Four states argued for the cycle used currently in the National Assessment of Educational Progress: assessing reading every two years along with either science and mathematics or writing and social studies, so reading results would be available every two years and results in the other subjects would be provided every four years. Eight states opted for the other intermediate cycle: assessing reading, writing and English in combination one year and mathematics the next, alternating science and social studies with mathematics. This would produce results for the basic skills areas every two years and the other subjects every four years. The difference in cost for the two intermediate options was estimated at about $50-55,000 on a yearly basis, with the NAEP schedule being lower in cost.

These results clearly suggest that an intermediate schedule is desired by states. On the basis of the numbers of responses, Option 3, or basic skills plus the other subjects, is felt marginally to be better.

Standardizing Procedures

Finally, states were asked how they felt procedures for standardizing data collection across states should be established. All respondents indicated that procedures should be governed by explicit guidelines

established by CCSSO or another suitable organization, that sampling and test-administration should be monitored to ensure uniformity, and that sampling, scoring, and data-processing should be conducted through a single, central project funded through pooling of resources from the states and administered by CCSSO.

Conclusion: Preliminary Design Features

These efforts provide the states with preliminary design specifications for state-by-state assessment of student achievement. These specifications call for the assessment:

- to be referenced against the optimal statements of subject-matter domain that the states can establish among themselves;
- to be reported in a simple, global format for performance in each subject at each grade level;
- to use a scale appropriate to the item pool that is ultimately used to construct the instrument and that enables states to report results usefully;
- to assess reading, writing, English and mathematics alternating every other year, and to assess science and social studies every four years in alternation with mathematics.

These specifications provide enough guidance to proceed with the development of the student achievement program, either collectively with the states or in conjunction with the National Assessment as called for in the CCSSO Assessment and Evaluation plan.